

NAME CHANGES IN *PELARGONIUM* (GERANIACEAE)

J. J. A. VAN DER WALT AND P. J. VORSTER

(Department of Botany, University of Stellenbosch)

ABSTRACT

1. The new name *Pelargonium magenteum* J. J. A. v. d. Walt is designated for *P. rhodanthum* Schltr. (1900), non Sweet (1825). 2. The new name *P. sericifolium* J. J. A. v. d. Walt is chosen for *P. sericeum* E. Mey. ex Harv. (1860), non Salisb. (1796). 3. The name *P. auritum* (L.) Willd., based on *Geranium auritum* L. (1753), is the correct name for *P. hirsutum* (Burm. f.) Ait. (1789) which is based on *Geranium hirsutum* Burm. f. (1759). *P. hirsutum* var. *melananthum* (Jacq.) Harv. is synonymous with *P. auritum* subsp. *auritum*. The new combination *P. auritum* subsp. *carneum* (Harv.) J. J. A. v. d. Walt is made from *P. hirsutum* var. *carneum* Harv. 4. The name *P. oreophilum* Schltr. is re-instated, as it is shown to have been erroneously placed in the synonymy of *P. hirtum* (Burm. f.) Jacq. 5. *P. populifolium* Eckl. & Zeyh. is placed in the synonymy of *P. ribifolium* Jacq. A specimen in Vienna (W) should be considered the holotype of *P. ribifolium*. 6. The name *P. abrotanifolium* (L.f.) Jacq. is applied to a highly variable group of specimens. Material previously designated *P. incisum* (Andr.) Willd. is included under *P. abrotanifolium*, but the application of the name *P. incisum* is problematical.

UITSREKSEL

NAAMSVERANDERINGE IN *PELARGONIUM* (GERANIACEAE)

1. Die nuwe naam *Pelargonium magenteum* J. J. A. v. d. Walt word gegee aan *P. rhodanthum* Schltr. (1900), non Sweet (1825). 2. Die nuwe naam *P. sericifolium* J. J. A. v. d. Walt word gekies vir *P. sericeum* E. Mey. ex Harv. (1860), non Salisb. (1796). 3. Die naam *P. auritum* (L.) Willd. wat baseer is op *Geranium auritum* L. (1753), is die regte naam vir *P. hirsutum* (Burm. f.) Ait. wat baseer is op *Geranium hirsutum* Burm. f. (1759). *P. hirsutum* var. *melananthum* (Jacq.) Harv. is sinoniem met *P. auritum* subsp. *auritum*. Die nuwe kombinasie *P. auritum* subsp. *carneum* (Harv.) J. J. A. v. d. Walt word gemaak van *P. hirsutum* var. *carneum* Harv. 4. Die naam *P. oreophilum* Schltr. word weer in gebruik geneem, omdat dit gevind is dat dit verkeerdelik beskou is as 'n sinoniem van *P. hirtum* (Burm. f.) Jacq. 5. *P. populifolium* Eckl. & Zeyh. word geplaas in die sinonomie van *P. ribifolium* Jacq. Daar is 'n eksemplaar in Wenen (W) wat as die holotipe van *P. ribifolium* beskou behoort te word. 6. Die naam *P. abrotanifolium* (L.f.) Jacq. word toegepas op 'n hoogs variërende groep eksemplare. Materiaal wat voorheen benaam is as *P. incisum* (Andr.) Willd. word ingesluit onder *P. abrotanifolium*, maar die toepassing van die naam *P. incisum* is problematies.

NEW NAME FOR *P. RHODANTHUM* SCHLTR.

The name *Pelargonium rhodanthum* was first used in 1825 by Sweet for a horticultural hybrid of unknown parentage. It is not known whether this hybrid has survived in cultivation.

In 1900 Schlechter used the same name when describing a new species from near Clanwilliam. As the name had previously been used in another context,

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P. rhodanthum Schltr. is a later homonym of *P. rhodanthum* Sweet and has to be discarded. No name later than 1900 is available for Schlechter's species, and, surprising as it may seem for such a conspicuous and relatively widespread species which occurs in an area long traversed by numerous plant collectors, no earlier name seems to be available either. We therefore designate the following new name:

***Pelargonium magenteum* J. J. A. v. d. Walt, nom. nov.**

P. rhodanthum Schltr. in Bot. Jb. 27: 152 (1900); Knuth in Pflanzenr. 4, 129: 451 (1912); J. J. A. v. d. Walt, Pelargoniums S. Afr.: 41 (1977); non *P. rhodanthum* Sweet, Geran. 3: 282 (1825).

Type: CAPE—"In arenosis montis Packhuisberg, in ditone Clanwilliam", Schlechter 8662 (B⁺, holo.; Z, lecto!; BM!; BOL!; E!; G-DC!; GRA!; K!; L!; P, 2 sheets!; S!; W!).

NEW NAME FOR *P. SERICEUM* E. MEY. EX HARV.

The name *Pelargonium sericeum* was first used in 1796 by Salisbury (Prodr.: 315) for a species previously known as *P. crassicaule* L'Hérit., Geran.: t. 26 (1792). It is not clear why Salisbury gave the new name, as there seems to have been no need to replace L'Héritier's name. As such, Salisbury's name has no nomenclatural standing, being a superfluous name. The name *P. sericeum* was again applied by E. Meyer [Drège, Zwei Pfl. Doc.: 209 (1843)] for another species, but without furnishing a description. This name was subsequently validated when published together with a description by Harvey [in Fl. Cap. 1: 282 (1860)]. As *P. sericeum* E. Mey. ex Harv. is a later homonym of *P. sericeum* Salisb., it is illegitimate. As no alternative name is available for *P. sericeum* E. Mey, ex Harv., we choose the following new name for this species:

***Pelargonium sericifolium* J. J. A. v. d. Walt, nom. nov.**

P. sericeum E. Mey. in Drège, Zwei Pfl. Doc.: 209 (1843), nom. nud.; ex Harv. in Fl. Cap. 1: 282 (1860); non Salisb. (1796).

Type: CAPE—Kaus Mountain, near Goedman's Kraal, Drège s.n. (? TCD, holo., not seen; G, 3 sheets!; ? K, not seen; L!; ? MEL, not seen; OXF!; P, 3 sheets!; PRE!; S!; SAM!).

The name *Pelargonium setosum* which appears on some herbarium sheets is a manuscript name without any nomenclatural standing.

CORRECT NAME FOR *P. HIRSUTUM* (BURM. F.) AIT.

It has become evident that the name *Pelargonium hirsutum* (Burm. f.) Ait.

(1789), based on *Geranium hirsutum* Burm. f. (1759), is preceded by the name *P. auritum* (L.) Willd. (1800) which is based on *Geranium auritum* L. (1753) and refers to the same species.

Harvey in Fl. Cap. 1: 267 (1860) enumerated two varieties of *P. hirsutum*, viz. var. *melananthum* (Jacq.) Harv. which is based on *P. melananthon* Jacq. (1791), and var. *carneum* Harv.

We have no doubt that both these varieties represent a single species, characterised by dense golden-yellow hirsute hairs on the lamina, the petiole and even on the peduncle. There is a considerable variation in the shape of the lanceolate lamina, from entire to deeply pinnatifid and even bi-pinnatifid or almost pinnatipartite. This variation does however not have any taxonomic significance, as it cannot be correlated with any other characteristics and a single plant may exhibit several or all these variations.

In our opinion the correlation between morphological differences and geographical distribution does however indicate a subspecific relationship between the two variants. It is true that according to the available information there is a slight overlap in the distribution areas of the two subspecies which may indicate that a certain amount of gene-flow takes place between them in the area of mutual contact. Field studies in this area should yield valuable information on the reproductive behaviour of the two subspecies. Occasional records of light-flowered individuals within the distribution area of the dark-flowered subspecies or vice versa are not above suspicion, and will have to be verified in the field.

The correct citation is as follows:

***Pelargonium auritum* (L.) Willd., Sp. Pl. 3: 644 (1800).**

subsp. ***auritum***

Geranium auritum L., Sp. Pl. ed. 1, 2: 679 (1753). Iconotype: "Comm. hort. 2. p. 121" (unpublished plate in Moninckx collection in Amsterdam!).

Geranium hirsutum Burm. f., Spec. Geran.: 50, t. 2, f. 68 (1759). Type: CAPE—"Cap. BON. SPEI" (G, lecto!).*

Pelargonium hirsutum (Burm. f.) Ait., Hort. Kew. ed. 1, 2: 417 (1789); Knuth in Pflanzenr. 4, 129: 339 (1912).

P. melananthon Jacq., Coll. 4: 188 (1791). Type: "Ex Promontorio bonae Spei" (W, holo!).

P. hirsutum (Burm. f.) Ait. var. *melananthum* (Jacq.) Harv. in Fl. Cap. 1: 267 (1860); Knuth op. cit. p. 340; J. J. A. v. d. Walt, Pelargoniums S. Afr.: 21 (1977).

* This specimen was chosen and labelled as lectotype because of the three specimens of this species in the Burman collection, it bears the closest resemblance to the illustration which accompanied the original description.

subsp. *carneum* (Harv.) J. J. A. v. d. Walt, comb. & stat. nov.

P. hirsutum (Burm. f.) Ait. var. *carneum* Harv. in Fl. Cap. 1: 267 (1860); Knuth op. cit. p. 340; non *P. carneum* Jacq. (1791). Syntypes: CAPE—without precise locality, Ecklon & Zeyher 468 (S!); 482 (S!), 483, 484, 485 (S!), 494; Drège 7490b (S!), 7491 (CGE!; K!; S!), 7493.

For a more complete synonymy we refer to Knuth (l.c.). For the subsp. *carneum* various older epithets are available, but as none of these are in subspecific or varietal rank, they do not have priority over the epithet *carneum* (Article 11 of the 1978 edition of the *International Code of Botanical Nomenclature*). The epithet *carneum* is here retained in preference to an earlier epithet in the interest of nomenclatural stability.

TABLE 1.
Pelargonium auritum: comparison of the two subspecies.

	subsp. <i>auritum</i>	subsp. <i>carneum</i>
Geographical distribution	South Western Cape, mainly west of E 22°	Southern Cape, mainly east of E 22°
Colour of petals	Dark purple black	White to light pink with red to purplish veins
Average dimensions of petals (mm): 2 posterior	11 × 2,5	13 × 2,5
3 anterior	9 × 1,5	10 × 1,5
Margins of petals	Conspicuously undulate	Slightly undulate to plane

RE-INSTatement OF THE NAME *P. OREOPHILUM* SCHLTR.

Pelargonium oreophilum Schltr., based on *Schlechter 8650* (BOL!; E!; PRE, 2 sheets!; Z!) was described from "Packhuis-Berg" near Clanwilliam in Bot. Jb. 27: 151 (1900). Knuth in Pflanzenn. 4, 129: 381 (1912) reduced it to a synonym under *P. hirtum* (Burm. f.) Jacq., where its position remained unquestioned up to the present time.

Under Knuth's concept of *P. hirtum*, two distinct populations can be distinguished, which differ from each other in a number of morphological characteristics. The first of these populations, to which Burman's name *Geranium hirtum* was originally applied, occurs on the Atlantic coastal plain between Cape Town and St. Helena Bay, while the population to which the name *P. oreophilum* applies, occurs to the north-east of the former population in a relatively restricted area in the Cedarberg range. The plants of the two populations exhibit a strong mutual resemblance on account of the hirsute, 1–2 pinnatifid-pinnate leaves. The

most conspicuous differences between the two populations are in the mode of attachment of the stipules, and in the petals. In *P. oreophilum* the stipules are attached to the petiole at their very bases only, while in *P. hirtum* they are adnate to the petiole for at least $\frac{1}{2}$ their total length. In *P. oreophilum* the petals are narrowly obovate without claws and the two posterior petals are sharply and strongly reflexed, while in *P. hirtum* the petals are broadly obovate with conspicuous claws and the two posterior petals are not reflexed. (Fig. 1). In both populations the petals occur in various shades of pink. The differences between the two populations can be correlated with several more characteristics, as shown in Table 2.

It is concluded that the number and magnitude of the differences between the two populations warrant specific distinction, and accordingly we re-instate the name *P. oreophilum* Schltr. for the population in the Cedarberg.

TABLE 2.

Comparison of *Pelargonium oreophilum* and *P. hirtum* (average dimensions in brackets).

Characteristic		<i>P. oreophilum</i>	<i>P. hirtum</i>
Petals: shape		Narrowly obovate without claws	Broadly obovate with conspicuous claws
size posterior (mm)		8,0–15,0 (11,0) × 1,5–3,5 (2,5)	7,0–11,5 (9,5) × 3,5–8,0 (5,5)
size anterior (mm)		7,5–14,0 (10,0) × 2,0–2,5 (2,0)	6,0–11,0 (9,0) × 1,5–4,0 (3,0)
Stamens: max. length (mm)		4,5–11,0 (7,5)	4,0–6,0 (5,5)
Spur: length (mm)		5,0–12,0 (8,0)	2,5–5,5 (4,0)
Pedicel: length (mm)		2,0–8,0 (4,5)	1,0–4,5 (2,0)
Stipules: length (mm)		2,0–6,0 (4,0)	7,0–15,0 (10,0)
	fixture	Basally attached	Decurrent along petiole for at least $\frac{1}{2}$ their total length
Leaf: length (mm)		5–22 (13)	7–70 (29)
Petiole: permanency		Persistent	Semi-persistent, usually only evident within 30 mm of stem apex
Lamina: size (mm)		6–21 (11) × 4–13 (7)	15–47 (32) × 7–22 (15)
Indumentum:		Very shortly hirsute	Hirsute

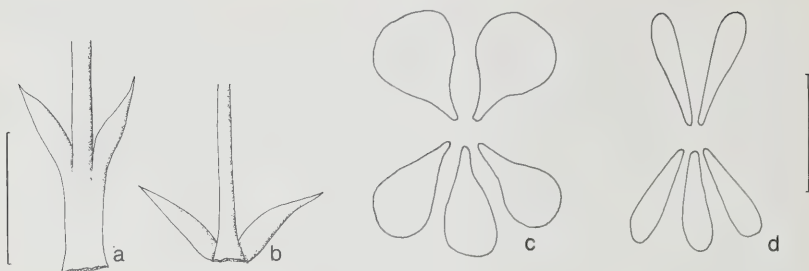


FIG. 1.

a and b, stipules of *Pelargonium hirtum* (Driifhout 2386 in STE-U 2189) and *P. oreophilum* (Van der Walt 549 in STE-U 807) respectively; c and d, petals of *P. hirtum* (Schlechter 5232) and *P. oreophilum* (Schlechter 8650) respectively. Scale denotes 10 mm.

The following specimens are representative of the two species:

P. oreophilum

CAPE—3118: Brandewynrivier (-DD), Schlechter 10824 (BOL!; Z!).

—3119: Nieuwoudtville (-AC), Leipoldt s.n. in BOL 10454 (BOL!).

—3219: Pakhuisberg/Pakhuispas (-AA), Bolus 8944 (BOL!), Esterhuysen 21724 (BOL, 2 sheets!; PRE, 2 sheets!), Leipoldt s.n. in BOL 20759 (BOL!), Schlechter 8650 (BOL!; E!; PRE, 2 sheets!; Z!; type of *P. oreophilum*), 8657 (GRA!), van der Walt 549 (STE-U!); Clanwilliam (-BB), Leipoldt s.n. in BOL 1409 (BOL!).

P. hirtum

CAPE—3218: Piquetberg (-AD), Schlechter 5232 (Z!); Clanwilliam (-BB), Leipoldt 470 (BOL!); Brackfontein at Clanwilliam (-BC), Ecklon & Zeyher 540 (W, 2 sheets!); 9 miles from Velddrif on road to St. Helena Bay (-CC), Thompson 800 (PRE!).

—3317: Saldanha (-BB), Parker 4636 (BOL!).

—3318: Langebaan (-AA), Grant 4702 (PRE!); Hopefield (-AB), Bachmann 1537 (Z!), 2095 (Z, 2 sheets!); Darling (-AD), Bolus 12630 (BOL!; PRE!), Esterhuysen 23363 (BOL!; PRE!); Cape Town (-CD), Dümmer 117 (E!); Lion's Head, Pillans 3916 (PRE!), Schlechter 1361 (Z, 2 sheets!), van der Walt 475 (STE-U!), Wilms 3073 (Z!), Wolley Dod 1564 (BOL!); Lion's Rump, Prior s.n. in PRE 56353 (K, not seen; PRE!), Thode 5994 (STE!), 7799 (STE!), Zeyher 4769 (BOL!); Sea Point, Bolus 4255 (BOL!), Dümmer 370 (E!); Signal Hill, Phillips 723 (PRE!); Paarl (-DB), van der Merwe 1002 (PRE!; STE!); Brackenfell (-DC), Bos 424 (PRE!; STE!); Tigerberg, Krauss 1297 (W!); "near Groenekloof and Paarl" (-?), Drège 1295 (PRE!).

—3418: Llandudno (-AB), Hafström & Acocks 736 (PRE!).

SYNONYMY AND TYPIFICATION OF *P. RIBIFOLIUM* JACQ.

It has become evident that the names *Pelargonium ribifolium* Jacq. and *P. populifolium* Eckl. & Zeyh., which were both upheld as valid in Knuth's account of the Geraniaceae in *Pflanzenr.* 4, 129 (1912), apply to a single species. The older name is *P. ribifolium*, which is therefore the correct name to apply to this species. *P. ribifolium* is typified by a specimen in Vienna (W) on which the name is written in Jacquin's handwriting. This specimen is here considered to be the holotype, and has been identified by us with a label to that effect. The correct citation is therefore as follows:

Pelargonium ribifolium Jacq., *Icon. Pl. Rar.* 3: 11, t. 538 (1794). Type: without precise locality, no collector stated (W, *holo.!*).

P. populifolium Eckl. & Zeyh., *Enum.* 1: 81 (1835). Type: CAPE—"Zuureberge" prope 'Enon' (Uitenhage) eorumque ad 'Langekloof' (Georg)", *Ecklon & Zeyher* 632 (S!; SAM!).

P. trilobatum sensu Eckl. & Zeyh. l.c., non Schrad. (1809) (teste *Ecklon & Zeyher* 633 (S!)).

DELIMITATION OF *P. ABROTANIFOLIUM* (L.F.) JACQ.

The names *Pelargonium abrotanifolium* (L.f.) Jacq. and *P. incisum* (Andr.) Willd. apply to a complex of populations which are characterized by small, repeatedly dichotomously divided leaf laminae which are hairy and glandular to various degrees. In habit these plants are profusely-branched shrublets, occasionally reaching a height of 1 000 mm but more often c. 300 mm high. The flowers are sessile or extremely shortly pedicelled and decidedly zygomorphic, the petals are subequal in size and seven of the stamens are fertile. Due to the close morphological similarity between the plants, especially in respect of the leaves, the application of the names became problematic, for which reason a closer investigation was undertaken.

This material is characterized by straight, short stamens and pistil which are only 5–6 mm long; cuneate or narrowly obovate, plane petals which are dark purple to white with purple markings on the upper two; and leaves with adpressed hairs which lend them a more or less silvery appearance. These specimens exhibit a considerable variation in respect of colour of the petals, length of the spur, number of flowers per inflorescence, degree of division of the leaves, and hairiness. Superficially two groups can be distinguished:

The one group has leaves which are imperfectly divided to varying degrees with the extreme condition approaching that of the second group (see below). The midribs of the leaf segments are often externally visible as adaxial grooves. The leaves are hairy to varying degrees, from almost glabrous to visibly villous with adpressed white hairs, and grey-green in colour. The inflorescences consist of (usually) 1–3 flowers. The petals are mostly white, and the spur is 25–30 mm

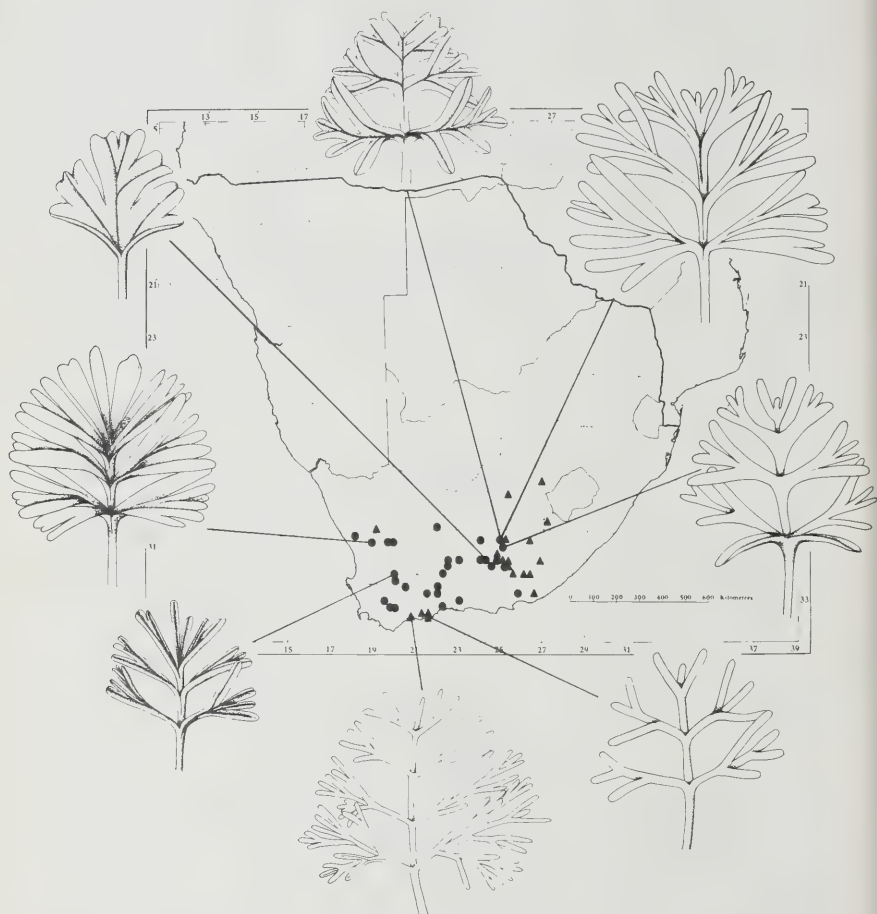


FIG. 2.

Pelargonium abrotanifolium: variation in leaf shape over known distribution range, drawn from live specimens cultivated in Stellenbosch: ● *P. abrotanifolium* sensu stricto; ▲ "*P. incisum*".

long. The geographical range of this group of specimens more or less coincides with the winter rainfall region of the Cape, south of S 30°45' and west of E 25°30'. We are of the opinion that the name *P. abrotanifolium* (L.f.) Jacq. applies to this group. The name *Geranium abrotanifolium* L.f. is typified by a sheet (LINN 858.19) which consists of two leafy twigs and a few badly-preserved flower fragments. While little information can be gleaned from the flower remains, the leaves fall within the range of variation recorded for this group.

The second group is characterized by leaves which are very finely divided into linear, involute segments of which the midribs cannot be distinguished externally. The leaves are rather densely villous with adpressed white hairs which lend a silvery appearance to the leaves. The inflorescences consist of up to five flowers. The petals are mostly pink to purple in colour, and the spur is 15–20 mm long. This group occurs immediately east of the first group, in an area receiving scant summer rainfall. The naming of this group presents a problem. The name *Geranium incisum* Andr. is not typified by a specimen, but by a coloured illustration in Andrews's *Botanist's Repository* 1: t. 67 (1799). The leaves on this illustration appear to be similar to those of the present group, but the flowers are white with dark pink markings on the two posterior petals. White is not a typical colour for the petals of this group, but it does occur. We can therefore only conclude that *Geranium incisum* was based on an unusual form of this group.

The close morphological similarity between the two groups appear to indicate a mutual relationship closer than that of separate species. At a first glance it would appear that a case exists for recognizing *P. abrotanifolium* and *P. incisum* as subspecies of the same species on account of the geographically significant morphological variation. However, there appears to be a complete gradation between the two types of leaves to such an extent that it is practically impossible to draw a definite line between the two, especially when working with herbarium specimens. Furthermore, it is not always possible to correlate the colour of the petals, number of flowers per umbel and length of the spur with leaf characteristics.

It appears probable to us that the observed variation indicates a degree of genetical heterogeneity or genetical instability. It may be that the two forms are in the process of becoming geographically and reproductively separated from each other, but at present we consider it more practical to treat them as a single variable species to which the name *Pelargonium abrotanifolium* (L.f.) Jacq. applies, while *Pelargonium incisum* (Andr.) Willd. (*Geranium incisum* Andr.) is reduced to a synonym under the former.

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